



February 17, 2017

Tom Moe USS Corporation P.O. Box 417 8771 Park Ridge Dr Mountain Iron, MN 55768

RE: Project: USS MinnTac NPDES-LINE 3 wkly

Pace Project No.: 1282659

#### Dear Tom Moe:

Enclosed are the analytical results for sample(s) received by the laboratory on February 08, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Melisa M Woods

Massir Wirds

melisa.woods@pacelabs.com

**Project Manager** 

**Enclosures** 

cc: Cory Hertling Terri Sabetti, NTS







# **CERTIFICATIONS**

Project: USS MinnTac NPDES-LINE 3 wkly

Pace Project No.: 1282659

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792

Alaska Certification UST-107 Alaska Certification UST-107 Alaska Certification #MN01084

Arizona Department of Health Certification #AZ0785 Minnesota Dept of Health Certification #: 027-137-445 North Dakota Certification: # R-203

Wisconsin DNR Certification #: 998027470 WA Department of Ecology Lab ID# C1007

Nevada DNR #MN010842015-1

Oklahoma Department of Environmental Quality



# **SAMPLE SUMMARY**

Project: USS MinnTac NPDES-LINE 3 wkly

Pace Project No.: 1282659

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1282659001	WS-002 Scrubber Make-up	Water	02/08/17 08:50	02/08/17 16:25
1282659002	WS-003 Thickener overflow	Water	02/08/17 08:40	02/08/17 16:25



# **SAMPLE ANALYTE COUNT**

Project: USS MinnTac NPDES-LINE 3 wkly

Pace Project No.: 1282659

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1282659001	WS-002 Scrubber Make-up	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	DMB	1	PASI-V
1282659002	WS-003 Thickener overflow	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	DMB	1	PASI-V



# **ANALYTICAL RESULTS**

Project: USS MinnTac NPDES-LINE 3 wkly

Pace Project No.: 1282659

Date: 02/17/2017 04:15 PM

Sample: WS-002 Scrubber Make-	up Lab ID:	1282659001	Collected	d: 02/08/17	7 08:50	Received: 02/	08/17 16:25 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered	Analytical	Method: EPA 2	200.7 Prepa	ration Meth	od: EP	A 200.7			
Calcium, Dissolved	106	mg/L	5.0	0.29	10	02/09/17 16:51	02/10/17 12:30	7440-70-2	
Magnesium, Dissolved	227	mg/L	5.0	0.67	10	02/09/17 16:51	02/10/17 12:30	7439-95-4	
Total Hardness, Dissolved	1200	mg/L	100	50.0	10	02/09/17 16:51	02/10/17 12:30		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Sulfate	890	mg/L	20.0	10.0	10		02/15/17 13:23	14808-79-8	
Sample: WS-003 Thickener overflow	Lab ID:	1282659002	Collected	d: 02/08/1	7 08:40	Received: 02/	08/17 16:25 Ma	atrix: Water	
			Report						
Parameters	Results	Units	1.59	ME					
			Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered	Analytical	Method: EPA 2				·	Analyzed	CAS No.	Qual
,	Analytical					·	02/10/17 12:34		Qual
200.7 MET ICP, Lab Filtered Calcium, Dissolved Magnesium, Dissolved	,	Method: EPA 2	200.7 Prepa	ration Meth	nod: EP/	A 200.7		7440-70-2	Qual
Calcium, Dissolved	777	Method: EPA 2	200.7 Prepa 5.0	nration Meth	nod: EP/	A 200.7 02/09/17 16:51	02/10/17 12:34	7440-70-2	Qual
Calcium, Dissolved Magnesium, Dissolved	777 184 2700	Method: EPA 2 mg/L mg/L	5.0 5.0 100	0.29 0.67	nod: EP/ 10 10	A 200.7 02/09/17 16:51 02/09/17 16:51	02/10/17 12:34 02/10/17 12:34	7440-70-2	Qual



#### **QUALITY CONTROL DATA**

USS MinnTac NPDES-LINE 3 wkly Project:

Pace Project No.: 1282659

QC Batch: 105673 Analysis Method:

EPA 200.7

QC Batch Method: EPA 200.7 Analysis Description: 200.7 MET Dissolved

Associated Lab Samples: 1282659001, 1282659002

METHOD BLANK: 419581

Matrix: Water

Associated Lab Samples:

1282659001, 1282659002

Blank

Reporting

Parameter Units Calcium, Dissolved mg/L Result ND ND

Limit MDL 0.50

Analyzed 0.029 02/10/17 11:08 Qualifiers

Magnesium, Dissolved

mg/L

0.50

0.067

02/10/17 11:08

LABORATORY CONTROL SAMPLE:

Parameter

419582

Spike Conc. 50

LCS % Rec 47.8

% Rec Limits

85-115

Qualifiers

Magnesium, Dissolved

Parameter

Calcium, Dissolved

Calcium, Dissolved

Magnesium, Dissolved

mg/L mg/L

1282514002

1282693001

Result

Result

Units

mg/L

mg/L

Units

mg/L

mg/L

Units

50 47.7

LCS

Result

419584

Result

96 95 85-115

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

419583

43.3

107

305

113

MSD

Conc.

Spike

50

50

50

50

MS MSD

Result

92.1

155

155

MS MSD

98

95

81

% Rec

% Rec

Max **RPD** RPD

Limits Qual 70-130 0 20 20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

419585

MS

Spike

Conc.

MSD

419586

154

92.3

155

96

83

98

% Rec

70-130

0

% Rec Max RPD Qual

Parameter Calcium, Dissolved Magnesium, Dissolved

Date: 02/17/2017 04:15 PM

MS Spike Conc.

50

50

50

50

Spike Conc.

MS MSD Result Result 339

MS % Rec 342

MSD % Rec 67 74

Limits

RPD 70-130

20 P6 70-130 20 1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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#### **QUALITY CONTROL DATA**

USS MinnTac NPDES-LINE 3 wkly Project:

Pace Project No.:

1282659

QC Batch: 106053 Analysis Method:

EPA 300.0

QC Batch Method: EPA 300.0 Analysis Description:

300.0 IC Anions

Associated Lab Samples: 1282659001

METHOD BLANK: 420780 Matrix: Water

Associated Lab Samples:

1282659001

Blank Result Reporting

Parameter

Units

Limit

MDL

Qualifiers

Sulfate ND 2.0 1.0 02/15/17 10:14 mg/L

LABORATORY CONTROL SAMPLE:

Parameter

Parameter

Parameter

Date: 02/17/2017 04:15 PM

420781

Units

mg/L

Units

mg/L

Units

1282746001

Result

1282560001

Result

Spike Conc.

Spike

Conc.

MS

50

LCS Result

LCS % Rec % Rec Limits

Qualifiers

Sulfate mg/L 50 50.1 100 90-110

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

420782

MS

MSD Spike Conc.

MSD Result

MSD

Result

237

MSD

% Rec

93

Analyzed

% Rec Max Limits

RPD RPD Qual 0 20 E

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

420784

54.2

191

420785

50

MSD

Spike

MS Result

MS % Rec

MS

% Rec

95

% Rec Limits

90-110

Max RPD RPD

Sulfate

Sulfate

Spike Conc. Conc. 50

50 104

420783

MS

Result

238

105 99 % Rec 101

MSD

90-110

1

20

Qual

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



#### **QUALITY CONTROL DATA**

USS MinnTac NPDES-LINE 3 wkly Project:

Pace Project No.:

1282659

QC Batch:

Sulfate

Sulfate

Sulfate

Sulfate

106112

QC Batch Method: EPA 300.0 Associated Lab Samples:

Analysis Method:

EPA 300.0

Analysis Description:

300.0 IC Anions

MDL

98

164

MSD

Result

262

METHOD BLANK: 420972

Associated Lab Samples: 1282659002

1282659002

Blank

Reporting

48.9

Parameter

Units mg/L

Units

mg/L

1282832001

Result

1282869002

Result

Result ND

Matrix: Water

Limit 2.0

Analyzed 1.0 02/15/17 18:37 Qualifiers

LABORATORY CONTROL SAMPLE:

Parameter

Parameter

Parameter

Date: 02/17/2017 04:15 PM

420973

Units

mg/L

Units

mg/L

Spike Conc.

Conc.

MS

Spike

Conc.

250

LCS Result

LCS % Rec % Rec Limits

90-110

MSD

99

Qualifiers

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

420974

420975

50

MS MSD Spike Spike

50

50

MS MSD Result Result

163

MS % Rec

98

100

% Rec % Rec Limits

90-110

Max RPD RPD

> 0 20

Qual

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

420976

ND

115

420977

Conc.

250

Conc.

MSD Spike

MS

Result

261

MS % Rec

MSD % Rec

101

% Rec Max RPD Limits RPD

Qual 90-110 0 20

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



#### **QUALIFIERS**

Project: USS MinnTac NPDES-LINE 3 wkly

Pace Project No.: 1282659

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### **LABORATORIES**

PASI-V Pace Analytical Services - Virginia

#### **ANALYTE QUALIFIERS**

Date: 02/17/2017 04:15 PM

E Analyte concentration exceeded the calibration range. The reported result is estimated.

P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the

spike level.



# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: USS MinnTac NPDES-LINE 3 wkly

Pace Project No.: 1282659

Date: 02/17/2017 04:15 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1282659001 1282659002	WS-002 Scrubber Make-up WS-003 Thickener overflow	EPA 200.7 EPA 200.7	105673 105673	EPA 200.7 EPA 200.7	105732 105732
1282659001	WS-002 Scrubber Make-up	EPA 300.0	106053		
1282659002	WS-003 Thickener overflow	EPA 300.0	106112		

# CHAIN-OF-CUSTODY / Analytic The Chain-of-Custody is a LEGAL DOCUMENT.

CLIENT: USS CORP

Due Date: 02/22/17

Section   Comparison   Compar					1					6			i de la companya de l	Ġ	26	rity.		WS-002 Scru	ITEM#		Requested Due Date:	Phone:	Email:	Address: P.O. Box 417	Company: USS Co	Section A Required Client Information:
Good Bill III Indian of Scark Life  Front Control Control  Front C							AND IN THE STANK OF THE STANK O							0			kner Overflow	bber Make-Up	AMPLE ID Character per box. (A-Z, 0-91, -) le ids must be unique			Fax		x 417	rporation	nation:
SAMPLE TYPE (0=GARAS CXCOMP)																			Drinking Water DW Water Will Water Will Will Water Wow Product P SoutSold OL OI Wipe Wipe Air AR Officer TS	MATRIX CODE	Project#	Project Nam	Purchase Or	Capy Ta:	Report To:	Section B Required Pr
PRINT Home of Audith Bit:  TEMP in C  Residual Chlorine (Y/N)						Ha											¥	¥Τ					der#		Tom	oject l
PRINT Home of Audith Bit:  TEMP in C  Residual Chlorine (Y/N)						2											7.	γ. -		COMP)		NPDES			Moe	nforma
Section   Campaign   Presented in Campaign   Present	$\neg$					لمتنته	DOM:										30 <u>67.3</u>	80K1-	≱			LINE 3 V				tion:
SAMPLE TEMPA TOOLUECTION   SAMPLE TEMPA TOOLUECTION   TO	SIGN	RIN	Na i			£7	#\^\ <b>\</b> [©										, , ,	ري	Min .	COLLE		交				
SAMPLE TEMPA TOOLUECTION   SAMPLE TEMPA TOOLUECTION   TO	ATURE	T Name															2	131	DATE	CTED						
SAMPLE TEMPA TOOLUECTION   SAMPLE TEMPA TOOLUECTION   TO	of SAM	of SAN	iovois		-	37											2000	08/5	<u>Z</u>							
Section C  Alternative information:    Property   Part   P	밁	면	SWAT			77			_			 					o	<u></u>		N N						
TEMP in C  Received on tice (V/N)  Received on tice (V/N)  Residual Chlorine (V/N)																			# OF CONTAINERS		Pac	Pac	Pac	P	Αtte	Sec
TEMP in C  Received on tice (V/N)  Received on tice (V/N)  Residual Chlorine (V/N)		*				•												_			Prof	Proj.	يُّ الْمُ	pany	ntion:	tion c
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TEMP in C  Residual Chlorine (Y/N)  Received on lice (Y/N)  Custody  Sealed  Cooler (Y/N)  Samples	_				(	d		7									lu	lu	talk in 11 to a first the last of a Charles with a bread and and a single serior.	版/Vi		pacet				
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Cooler (Y/N) Samples	TEMP	in C				2														*****						i g
Cooler (Y/N) Samples																			Residual Chlorine (Y/N)				25.6			į.
Cooler (Y/N) Samples	Recei	ived (	on			اح							1				두	나, 나				Š	2			ļ
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# Pace Analytical "

# Document Name:

# Sample Condition Upon Receipt Form

Document No.:

Document Revised: 23Feb2015

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Issuing Authority:

F-VM-C-001-Rev.09 Pace Virginia, Minnesota Quality Office

Courier: Fed Ex UPS	USPS Other			PM: MMW Due Date: 02/22/17 CLIENT: USS CORP
Fracking Number:		·		
ustody Seal on Cooler/Box Present?	No	Seals I	ntact? [	Yes No Optional: Proj. Due Date: Proj. Name:
acking Material: Bubble Wrap Bubble Ba	gs 🔼 N	lone [	_Other:	Temp Blank? Yes No
ermometer Used: 🖊 140792808	Type of	Ice:	Wet [	Blue None Samples on ice, cooling process has be
Cooler Temp Read °C: 1.7 Cooler Temp Comp should be above freezing to 6°C Correction Fact			2 cO Date an	Biological Tissue Frozen? Yes No Dinitials of Person Examining Contents: 7-8-17 M
Chain of Custody Present?	Yes	□No	□N/A	1.
Chain of Custody Filled Out?	∑¥es	□No	□N/A	2.
Chain of Custody Relinquished?	□¥€s	□No	□N/A	3.
Sampler Name and Signature on COC?	₹Yes	□No	□N/A	4.
Samples Arrived within Hold Time?	√Yes	□No	□n/a	5.
Short Hold Time Analysis (<72 hr)?	☐Yes	√No	□N/A	6.
Rush Turn Around Time Requested?	□Yes	□No	□N/A	7.
Sufficient Volume?	ZYes	□No	N/A	8.
Correct Containers Used?	✓Yes	□No	□N/A	9.
-Pace Containers Used?	■Yes	□No	□n/a	
Containers Intact?	Yes	□No	□N/A	10.
Filtered Volume Received for Dissolved Tests?	Yes	□No	□N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	Yes	□No	□n/a	12.
-includes Date/Time/ID/Analysis Matrix: 💢	<u> </u>			
All containers needing acid/base preservation will be shecked and documented in the pH logbook.	□Yes	□No	ØN/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐Yes	□No	ØN/A	13.
feadspace in VOA Vials ( >6mm)?	Yes	□No	√N/A	14.
Trip Blank Present?	☐Yes	□No	Øγ/A	15.
Trip Blank Custody Seals Present?	Yes	∏No	ØN/A	
Pace Trip Blank Lot # (if purchased):				
IENT NOTIFICATION/RESOLUTION				Field Data Required? Yes No
Person Contacted:				ate/Time:
Comments/Resolution:				
			<del> </del>	
		_		777
ECAL WAIVER ON FILE Y		<b>∕</b> TEMF	PERATU	RE WAIVER ON FILE Y N
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